ELECTRICAL ABBREVIATIONS

1PH	SINGLE–PHASE
1P	SINGLE POLE
2/C	TWO–CONDUCTOR
3/C	THREE–CONDUCTOR
3PH	THREE–PHASE
4/C	FOUR–CONDUCTOR
4W	FOUR–WIRE
A/C UNIT	AIR CONDITIONING UNIT
A/E	ARCHITECT/ENGINEER
AAP	ALARM ANNUNCIATOR PANEL
AC	ALTERNATING CURRENT OR ARMORED CABLE
ACC	ACCESSIBLE
ADDL	ADDITIONAL
ADJ	ADJACENT, ADJOINING
ADO	AUTOMATIC DOOR OPENER
AF	AMPERE FRAME OR AMP FUSE
AFC	ABOVE FINISHED COUNTER, AUTOMATIC FREQUENCY CONTROL, OR AVAILABLE FAULT CURRENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AH	AMPERE HOUR
AHJ	AUTHORITY HAVING JURISDICTION
AIC	AMPERE INTERRUPTING CAPACITY
ALT	ALTERNATE
AMB OR A	AMBIENT
AMP	AMPERE
ARCH	ARCHITECT
ASC	AMPS SHORT CIRCUIT
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AV	AUDIO VISUAL
BAT	BATTERY
BC	BARE COPPER
BD	BOARD
BFF	BELOW FINISH FLOOR
BIL	BASIC INSULATION LEVEL
BLDG	BUILDING
BPIP	BOILER PLANT INSTRUMENTATION PANEL
BRKR	BREAKER
BYP	BY PASS
C	CONDUIT
CAB	CABINET
CALC	CALCULATE
CAP	CAPACITY
CAT	CATALOG
CATV	COMMUNITY ANTENNA TELEVISION
CCR	CONTROL CONTACTOR
CCTV	CLOSED CIRCUIT TELEVISION
cd	CANDELA
CD	CONSTRUCTION DOCUMENTS
CF	CONTRACTOR FURNISHED
CF/CI	CONTRACTOR FURNISHED/CONTRACTOR INSTALLED
CF/OI	CONTRACTOR FURNISHED/OWNER INSTALLED
CFE	CONTRACTOR FURNISHED EQUIPMENT
CHW	CHILLED WATER
CHWP	CHILLED WATER PUMP
CKT	CIRCUIT
CKT BRKR	CIRCUIT BREAKER
CLF	CURRENT LIMITING FUSE
CLG	CEILING
CMU	CONCRETE MASONRY UNIT
COAX	COAX CABLE
COMM	COMMUNICATION
COMPT	COMPARTMENT
CONC	CONCRETE
CONT	CONTINUE
CONTR	CONTRACTOR
COORD	COORDINATE
COTR	CONTRACTING OFFICERS TECHNICAL REPRESENTATIVE
CPT	CONTROL POWER TRANSFORMER
CRI	COLOR RENDERING INDEX
CT	CURRENT TRANSFORMER
CTV	CABLE TELEVISION
CU	COPPER
CU FT	CUBIC FEET
CUR	CURRENT
DB	DECIBEL OR DIRECT BURIAL
DC	DIRECT CURRENT
DCP	DIMMER CONTROL PANEL
DEG C	DEGREES CELSIUS
DEG F	DEGREES FAHRENHEIT
DEMO	DEMOLITION
DIAG	DIAGRAM
DISC	DISCONNECT
DISTR	DISTRIBUTION
DISTR PNL	DISTRIBUTION PANEL
DMR SW	DIMMER SWITCH
DN	DOWN
DPDT	DOUBLE POLE, DOUBLE THROW
DPST	DOUBLE POLE, SINGLE THROW
DRSW	DOOR SWITCH
DS	DISCONNECT SWITCH
DWG	DRAWING
EC	EMPTY CONDUIT
EG	EQUIPMENT GROUND
EL	ELEVATION
ELEC	ELECTRIC OR ELECTRICAL
ELEV	ELEVATOR
EMCP	EMERGENCY MONITORING CONTROL PANEL
EMER	EMERGENCY
EMI	ELECTROMAGNETIC INTERFERENCE
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
EPO	EMERGENCY POWER OFF
EPRF	EXPLOSION PROOF
ESMT	EASEMENT
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EXIST	EXISTING
FA	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FABL	FIRE ALARM BELL
FABX	FIRE ALARM BOX
FACP	FIRE ALARM CONTROL PANEL
FC	FOOTCANDLE
FI	FILM ILLUMINATOR
FIXT	FIXTURE
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE METALLIC CONDUIT
FLT	FLOODLIGHT
FLUOR	FLUORESCENT
FLUOR FIX	FLUORESCENT FIXTURE
FOUTT	TELEPHONE FLOOR OUTLET
FP	FIRE PROTECTION
FT	FEET OR FOOT
FU SW	FUSED SWITCH
FVNR	FULL VOLTAGE NON–REVERSING
FVR	FULL VOLTAGE REVERSING
G OR GND	GROUND OR GENERATOR
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GTB	GROUND TERMINAL BOX
HID	HIGH INTENSITY DISCHARGE
HOA	HAND–OFF–AUTOMATIC
HP	HORSEPOWER
HT	HEIGHT
HZ	HERTZ
IESNA	ILLUMINATION ENGINEERING SOCIETY OF NORTH AMERICA
IMC	INTERMEDIATE METAL CONDUIT
INCAND	INCANDESCENT
IR	INFRARED
IWH	INSTANTANEOUS WATER HEATER
J–BOX	JUNCTION BOX
kV	KILOVOLT
kVA	KILOVOLT AMPERE
kVAH	KILOVOLT AMPERE PER HOUR
kVAR	KILOVOLT AMPERE REACTIVE
kW	KILOWATT
kWH	KILOWATT HOUR
kWHM	KILOWATT HOUR METER
LED	LIGHT EMITTING DIODE
LF	LINEAR FEET (FOOT)
LM	LUMEN
LP	LIGHT POLE
LPS	LOW PRESSURE SODIUM
LRA	LOCKED ROTOR AMPS
LTCP	LOCAL TEMPERATURE CONTROL PANEL
LT	LIGHT
LTG	LIGHTING
LTG PNL	LIGHTING PANEL
LTNG	LIGHTNING
LV	LOW VOLTAGE
MATV	MASTER ANTENNA TELEVISION SYSTEM
MAX	MAXIMUM
MC	METAL–CLAD
MCA	MINIMUM CIRCUIT AMPS
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANEL
MECH	MECHANICAL
MG	MOTOR GENERATOR
MH	MANHOLE
MIN	MINIMUM
MOCP	MAXIMUM OVERCURRENT PROTECTION
MLO	MAIN LUGS ONLY
MT	MOUNT
MTD	MOUNTED
MTG	MOUNTING
MTS	MANUAL TRANSFER SWITCH
MV	MEDIUM VOLTAGE
MVA	MEGAVOLT–AMPERE
MW	MEGAWATT MICROWAVE
NA	NOT APPLICABLE
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NEUT OR N	NEUTRAL
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NS	NO SCALE
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OL	OVERLOAD
P	POLE
PA	PUBLIC ADDRESS
PB	PANELBOARD, PULL BOX, OR PUSHBUTTON
PBPU	PREFABRICATED BEDSIDE PATIENT UNIT
PCB	POLYCHLORINATED BIPHENYL
PEC	PHOTOELECTRIC CELL
PED	PEDESTAL
PEND	PENDANT
PF	POWER FACTOR
PH	PHASE
PNL	PANEL
POD	POWER OPERATED DAMPER
PT	POTENTIAL TRANSFORMER
PTRV	POWER TYPE ROOF VENTILATION
PVC	POLYVINYL CHLORIDE (PLASTIC)
PWR	POWER
RCP	REFLECTED CEILING PLAN
REC	RECESSED
RECPT	RECEPTACLE
RGS	RIGID GALVANIZED STEEL
RM	ROOM
RMS	ROOT MEAN SQUARE
REQD	REQUIRED
SCC	SHORT CIRCUIT CAPACITY
SES	SERVICE ENTRANCE SECTION
SD	SMOKE DETECTOR
SF	SQUARE FOOT (FEET)
SHT	SHEET
SI	INTERNATIONAL SYSTEM OF UNITS
SPEC	SPECIFICATION
SPST	SINGLE POLE, SINGLE THROW
SURF	SURFACE
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TC	TIME CLOCK
TEL	TELEPHONE
TP	TWISTED PAIR
TPS	TWISTED PAIR SHIELDED
TTB	TELEPHONE TERMINAL BOARD
TV	TELEVISION
TYP	TYPICAL
UFAS	UNIFORM FEDERAL ACCESSIBILITY STANDARDS
UFD	UNDERFLOOR DUCT
UGND	UNDERGROUND
UL	UNDERWRITERS LABORATORY
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTIL	UTILITY
V	VOLT
VA	VOLT AMPERE
VAR	VOLT AMPERE REACTIVE
VFD	VARIABLE FREQUENCY DRIVE
VOLT	VOLTAGE
W	WATT
WH	WATER HEATER
WP	WEATHERPROOF
XFER	TRANSFER
XFMR	TRANSFORMER

ELECTRICAL SYMBOLS – POWER PLAN

- CONDUIT CONCEALED IN WALL OR CEILING
- CONDUIT CONCEALED UNDERGROUND
- CONDUIT CONTINUATION
- BRANCH CIRCUIT HOMERUN
- DP#__ DISTRIBUTION PANEL
- PANELBOARD CABINET, SURFACE MOUNTED
- JUNCTION BOX
- RECEPTACLE, DUPLEX
- RECEPTACLE, DOUBLE DUPLEX
- RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER
- RECEPTACLE, SPECIAL PURPOSE
  A = 120V, 20A, 1 PHASE, 2–POLE, 3W, NEMA 5–20R.
  B = 208V, 20A, 1 PHASE, 2–POLE, 3W, NEMA 6–20R.
  C = 120V, 30A, 1 PHASE, 2–POLE, 3W, NEMA 5–30R.
  D = 208V, 30A, 1 PHASE, 2–POLE, 3W, NEMA 6–30R.
  E = 208V, 60A, 1 PHASE, 3–POLE, 4W, NEMA 14–60R.
  F = 208V, 30A, 3 PHASE, 3–POLE 4W, NEMA 15–30R.
  G = 208V, 50A, 3 PHASE, 3 POLE, 4W, NEMA 15–30R.
  H = 208V, 60A, 3 PHASE, 3 POLE, 4W, NEMA 15–60R.
  I = 208V, 40A, 1 PHASE, 2 POLE, 3W, NEMA 6–40R.
- SPECIAL CONNECTION. FURNISH AND INSTALL PER MANUFACTURER'S RECOMMENDATIONS
- MOTOR, SINGLE–PHASE
- MOTOR, THREE–PHASE
- DISCONNECT SWITCH, FUSED
- DISCONNECT SWITCH, UNFUSED
- STARTER, COMBINATION WITH DISCONNECT SWITCH
- STARTER OR MOTOR CONTROLLER
- VFD VARIABLE FREQUENCY DRIVE
- $x SWITCH

F = FUSED SWITCH	K = KEY OPERATED
L = LOCK	LM= LOW VOLTAGE MASTER
M = MANUAL MOTOR STARTING	MC= MOMENTARY CONTACT
MP= MOTOR SNAP WITH PILOT LIGHT (THERMAL TYPE)	P = WITH PILOT LIGHT
PB= PUSH BUTTON STATION	RC= REMOTE CONTROL
WP= WEATHER PROOF	X = EXPLOSION PROOF

ELECTRICAL SYMBOLS – LIGHTING PLAN

$x SWITCH

BLANK = SINGLE POLE	2 = DOUBLE POLE
3 = THREE–WAY	4 = FOUR–WAY
D = DIMMER	K = KEY OPERATED
LV= LOW VOLTAGE	L = LOCK
LM= LOW VOLTAGE MASTER	P = WITH PILOT LIGHT
PB= PUSH BUTTON STATION	RC= REMOTE CONTROL
T = TIMER OPERATED	WP= WEATHER PROOF
X = EXPLOSION PROOF	Mo= OCCUPANCY SENSOR

HP = HORSEPOWER RATED SWITCH WITH THERMAL OVERLOADS SIZED AS REQUIRED BY EQUIPMENT LABEL RATING.

- LIGHT FIXTURE, SURFACE MOUNTED FLUORESCENT, 1'x4' [305x1220mm], STRIP/INDUSTRIAL FLUORESCENT; LETTER INDICATES TYPE.
- EM EMERGENCY LIGHT FIXTURE WITH BATTERY BACKUP; LETTER INDICATES TYPE. BATTERY CONNECTED TO LOCAL UNSWITCHED LIGHTING CIRCUIT. CONNECT FIXTURE FOR CONTINUOUS OPERATION AS NIGHT LIGHT, UON. 'EM' DESIGNATES FIXTURE TO BE SWITCHED WHERE INDICATED ON PLANS.

COMMUNICATIONS SYMBOLS – SYSTEM PLAN

- OUTLET, COMBINATION TELEPHONE/DATA COMMUNICATION MTD 1'–6" [457mm] OR SAME AS ADJACENT ELECTRICAL RECEPTACLE.
- TELEPHONE TERMINAL CABINET
- TTB TELEPHONE BACKBOARD (WALL MOUNTED)

REFERENCES

- XX/X MECHANICAL EQUIPMENT REFERENCE
- (X) KEYED NOTE
- BREAK SYMBOL
- REVISION DELTA
- DRAWING TITLE

GENERAL NOTES

A. ALL CONTRACT DOCUMENTS ARE PART OF THE ELECTRICAL WORK INSOFAR AS THEY APPLY, AS IF REFERRED TO IN FULL. SEE CONTRACT DOCUMENTS OF ALL OTHER DISCIPLINES FOR WORK TO BE PERFORMED BY THE ELECTRICAL CONTRACTOR.

B. DO NOT SCALE ELECTRICAL DRAWINGS. DRAWINGS ARE MADE ON A SMALL SCALE, DEVICES AND EQUIPMENT ARE SHOWN IN THEIR APPROXIMATE LOCATION, UNLESS SPECIFICALLY DIMENSIONED. VERIFY ALL DIMENSIONS ON THE PROJECT. REFER TO CONTRACT DOCUMENTS OF ALL OTHER DISCIPLINES FOR DIMENSIONS.

C. MATERIALS, DIMENSIONS, WALL THICKNESS, ROUGH OPENINGS, PATTERNS, AND THE LIKE SHALL BE FIELD VERIFIED BY THE CONTRACTOR. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER PRIOR TO COMMENCING WITH THE WORK.

D. PRIOR TO ROUGH–IN OF ANY ELECTRICAL EQUIPMENT THE CONTRACTOR SHALL COORDINATE WITH ALL CONSTRUCTION DOCUMENTS AND ALL OTHER TRADES TO PREVENT ANY INTERFERENCES. PREPARE COORDINATION DRAWINGS AS REQUIRED IN CONJUNCTION WITH OTHER TRADES TO PREVENT INTERFERENCES. ANY MODIFICATIONS TO WORK INSTALLED DUE TO LACK OF COORDINATION SHALL BE FULLY BORNE BY THE CONTRACTOR.

E. CONTRACTOR SHALL MAINTAIN A COMPLETE SET OF AS–BUILT DRAWINGS. AS–BUILT SET OF DRAWINGS SHALL BE UPDATED DAILY AND SHALL DOCUMENT THE ACTUAL INSTALLED CONDITION OF THE ENTIRE ELECTRICAL NSTALLATION. AS–BUILT SET OF DRAWINGS SHALL BE AVAILABLE AT ALL TIMES ON THE SITE FOR INSPECTION BY CODE OFFICIALS, OWNER, ARCHITECT, AND ENGINEER.

F. OBTAIN ALL PERMITS, COORDINATE, FURNISH, INSTALL, CONNECT AND TEST ALL ELECTRICAL EQUIPMENT REQUIRED FOR ALL THE SYSTEMS INSTALLED UNDER THIS CONTRACT TO INSURE COMPLETE AND FULLY OPERATIONAL SYSTEMS.

G. INSTALL ALL EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS.

H. ALL FINAL LOCATIONS AND ARRANGEMENTS OF LIGHTING FIXTURES SHALL BE OBTAINED FROM THE ARCHITECTURAL REFLECTED CEILING PLAN.

I. LIGHTING FIXTURES WITH MORE THAN TWO LAMPS SHALL HAVE TWO OUTER LAMPS CONTROLLED WITH ONE SWITCH AND INNER LAMP(S) CONTROLLED BY A SECOND SWITCH.

J. (1) EACH BRANCH CIRCUIT HOMERUN SHALL HAVE NO MORE THAN THREE CIRCUITS. EACH BRANCH CIRCUIT HOMERUN SHALL HAVE A SEPARATE GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR.

K. MULTI–GANG BACKBOXES FOR DIFFERENT VOLTAGES AND TYPES OF EMERGENCY AND NORMAL BRANCH WIRING DEVICES SHALL HAVE DIVIDERS BETWEEN DEVICES.

L. ALL ELECTRICAL WORK SHALL BE COMPLETED WITH ALL PROXIMATE ELECTRICAL CIRCUITS DE–ENERGIZED (I.E. A NEW BREAKER OR CIRCUIT CANNOT BE ADDED TO A PANEL UNLESS THE PANEL IS COMPLETELY DE–ENERGIZED), OR THE CONTRACTOR MUST COMPLY WITH NFPA 70E FOR WORK ON ENERGIZED SERVICE. THE VA WILL DETERMINE IF THE ELECTRICAL SERVICE CAN BE SHUTDOWN OR IT WILL HAVE TO BE WORKED HOT DEPENDING ON THE CRITICALITY OF THE AREA BEING AFFECTED. IF THE WORK MUST BE DONE WITH THE SERVICE LIVE, THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL REQUIRED PROTECTIVE TOOLS, EQUIPMENT, AND CLOTHING, AND MUST FOLLOW THE JOB SPECIFIC WORK PLAN PREPARED BY THE VA. WORK THAT REQUIRES SHUTTING DOWN ELECTRICAL SERVICE MAY HAVE TO BE ACCOMPLISHED DURING OTHER THAN NORMAL DUTY HOURS.

ELECTRICAL DRAWING INDEX

95% SUBMISSION

REVISIONS | DATE

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PRELIMINARY NOT FOR CONSTRUCTION

DRAWING TITLE	ELECTRICAL LEGEND AND SYMBOLS
APPROVED: DIVISION CHIEF	
APPROVED: SERVICE DIRECTOR	
PROJECT TITLE	VAMC ENERGY UPGRADES PHASE ONE BUILDING 33
BUILDING NUMBER	33
CHECKED	AKD
DRAWN	DJP
LOCATION	BOISE, IDAHO
DATE	03/03/11
PROJECT NO.	531–10–114
DRAWING NO.	E0.1
DWG.	25 OF 32

DEPARTMENT OF VETERANS AFFAIRS

Username: JGRAGG
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